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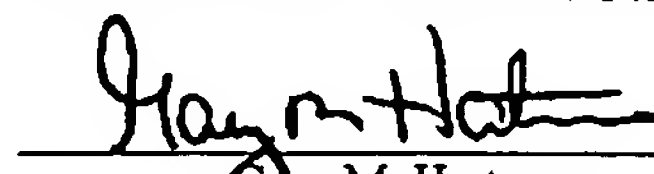
- ☒ [X] Response under 37 CFR §1.116
- ☐ [ ] Notice of Appeal
- ☐ [ ] Appeal Brief under 37 CFR §41.37 (filed in triplicate)
- ☐ [ ] Reply Brief under 37 CFR §41.41 (filed in triplicate)
- ☐ [ ] Request for Continued Examination (RCE) Transmittal
- ☐ [ ] Other: \_\_\_\_\_

for filing in U.S. Patent Application Serial No. 10/605,858

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PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No. : 10/605,858 Confirmation No. **2857**  
Applicant : Dong-Sil NMN Park et al.  
Filed: : October 31, 2003  
TC/Art Unit: : 1762  
Examiner : Kirsten C. Jolley  
  
Docket No. : 132855  
Customer No. : 30952

Commissioner for Patents  
P.O. Box 1450  
Alexandria VA 22313-1450

**REPLY UNDER 37 CFR §1.116**

This paper is being filed in response to an Office Action dated  
February 18, 2005 (Paper No. 20050216).

In the Office Action, the Examiner reviewed claims 1-7 and 9-30 of the  
above-identified US Patent Application, with the result that claims 1-7 and 9-20  
were allowed and claim 27 (which depends from claim 21) was deemed to  
recite allowable subject matter, but claims 21-26 and 28-30 were rejected  
under 35 USC §103 in view of U.S. Patent No. 5,997,604 to Rafferty et al.  
(Rafferty). Applicants respectfully request reconsideration of the rejection of  
claims 21-26 and 28-30 for the following reasons.

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Independent claim 21 is reproduced below.

Claim 21: A process of forming a diffusion coating on a component, the process comprising the steps of:  
dissolving an activator in a solvent to form an activator solution;  
mixing a particulate filler and a particulate donor material containing a coating element with the activator solution to form an adhesive mixture having a formable, malleable consistency;  
applying the adhesive mixture to a surface of the component;  
and  
heating the component to a temperature sufficient to vaporize and react the activator with the coating element of the donor material to form a reactive vapor of the coating element, the reactive vapor reacting at the surface of the component to form a diffusion coating containing the coating element.

In view of the above, claim 21 requires the steps of "dissolving an activator in a solvent to form an activator solution," and then "form[ing] an adhesive mixture" by "mixing a particulate filler and a particulate donor material . . . with the activator solution."

The Examiner cited Rafferty as teaching a "metalide coating system 15 which comprises a paste binder in combination with powdered metal alloy, a halogen source as an activator which reacts with the metal of the metal alloy, and filler particles." Rafferty was further cited as teaching that the metalide coating system 15 can be in the form of a slurry by using a liquid or paste binder, which the Examiner concluded "necessarily comprises some solvent." Applicants do not contest the above conclusions drawn from Rafferty.

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The Examiner then explained

Rafferty et al. does not teach the order of mixing of claim 21 (i.e., first dissolving activator in solvent, then mixing the activator solution with the remainder of the ingredients); instead, Rafferty et al. teaches first mixing the binder with solvent and then mixing the binder solution with the remaining ingredients including activator. However, it is the Examiner's position that it would have been obvious to one having ordinary skill in the art to have rearranged the order of mixing of ingredients with the expectation of achieving similar results, in the absence of a showing of criticality or unexpected results, since Rafferty et al. does not teach that the order of mixing of ingredients is critical or affects the product produced.

The basis for this argument was that "the transposition of process steps, where the processes are substantially identical or equivalent in terms of function, manner and result, was held to not patentably distinguish the process. *Ex parte Rubin*, 128 USPQ 440 (Bd. Pat. App. 1959)."

However, Applicants are claiming the step of "dissolving an activator in a solvent to form an activator solution," a step which is not disclosed or suggested by Rafferty. Applicants believe that this step precludes their process from being merely "the transposition of process steps, where the processes [of Rafferty and Applicants] are substantially identical or equivalent in terms of function, manner and result." Instead, Applicants believe their process entails a step with a "function, manner and result" not disclosed or suggested by Rafferty

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(an activator solution) and as a whole has with a "function, manner and result" not disclosed or suggested by Rafferty (an adhesive mixture comprising particulate materials in an activator solution). As such, Applicants respectfully believe that the rule in *Ex parte Rubin* is not applicable here.

If the Examiner remains unconvinced by the above argument, Applicants still respectfully believe that the rejection is improper because the rejection is based on modifying Rafferty's teachings (1) without any motivation or suggestion from Rafferty or any other source, since nothing of record discloses or suggests why one skilled in the art would try or even consider dissolving an activator, and (2) without any reasonable expectation that a dissolved activator could be successful as the vehicle for particulate materials and remain effective during later steps of a diffusion process employing the activator. This argument for withdrawing the rejection is squarely based on MPEP §2143, entitled "Basic Requirements of a *Prima Facie* Case of Obviousness," which instructs the following:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

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The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The above rule is applicable to all 35 USC §103 rejections, including the situation covered by *Ex parte Rubin*. As understood by Applicants, the rejection of claim 21 does not establish all of the "three basic criteria" required by the §2143 rule.

(1) While the argument for the rejection appears to be intended to establish the first criterion ("suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference") on the basis that it would be obvious to merely "rearrange[] the order of mixing of ingredients," the rejection does not establish any suggestion or motivation for one of ordinary skill in the art to dissolve Rafferty's activator, which does not entail a "rearranged . . . order of mixing of ingredients," but is a distinct step that results in a physical change in an ingredient that is not suggested or motivated by Rafferty.

(2) While the argument for the rejection also appears to be intended to establish the second criterion ("there must be a reasonable expectation of success") on the basis that "one having ordinary skill in the art [would] have rearranged the order of mixing of ingredients with the expectation of achieving

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similar results," nothing of record provides any "reasonable expectation" that a dissolved activator could "successfully" serve as a binder and still be effective during later steps of a diffusion process, as is required by Applicants' process recited in claim 21.

(3) Finally, the argument for the rejection does not appear at all to address the last criterion, namely, "the prior art reference . . . must teach or suggest all the claim limitations." Nothing of record "teach[es] or suggest[s]" the claim limitation (step) of "dissolving the activator . . . to form an activator solution," as is required by Applicants' claim 21.

In view of the above, Applicants believe that "rearrang[ing] the order of mixing of ingredients" as disclosed by Rafferty (per the Examiner, "Rafferty et al. teaches first mixing the binder with solvent and then mixing the binder solution with the remaining ingredients including activator"), one might rearrange order in which the dissolved binder, particulate donor, particulate filler, and activator materials are mixed, but there is simply no basis for one to dissolve the activator material instead of (or in addition to) the binder.


For the above reasons, Applicants respectfully believe that Rafferty does not obviate independent claim 21 or any of its dependent claims, and respectfully request their allowance.



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Should the Examiner have any questions with respect to any matter  
now of record, Applicants' representative may be reached at (219) 462-4999.

Respectfully submitted,

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